

LISTING OF AND AMENDMENTS TO CLAIMS:

1. - 11. (canceled)

12. (currently amended) An apparatus for filing vias in a wafer, comprising:

a chamber in which to place the wafer, said chamber being capable of being evacuated;

a surface upon which to place said wafer;

a pressurized paste delivery portion for providing a paste to fill said vias; and

a pressurized paste filling portion for bringing said paste into contact with said vias under pressure so that said paste fills said vias.

13. (currently amended) The apparatus as recited in claim 12, wherein said paste filling portion provides said paste at a pressure within [[with]] the range of 10 to 100 PSI.

14. (currently amended) The apparatus as recited in claim 12, wherein said paste filling delivery portion comprises:

a planar surface onto which said paste is deposited; and

a mechanism for applying pressure so that said paste on said surface is forced into contact with said wafer.

15. (original) The apparatus as recited in claim 14, wherein said paste delivery portion comprises:

a surface onto which said paste is deposited; and

a passageway through which said paste is delivered to said surface.

16. (original) The apparatus as recited in claim 14, wherein said mechanism for applying pressure comprises:

a plate which defines said surface; and

components for applying a pressure differential to said plate so as to force said plate toward said wafer.

17. (original) The apparatus as recited in claim 16, further comprising a compliant material on said surface to which said paste is applied.

18. (withdrawn) The apparatus as recited in claim 12, wherein said paste filling portion comprises:

a plate having a portion for receiving said paste;

a first seal for sealing said plate to said surface upon which said wafer is placed;

a second seal for sealing said paste between said plate and said plate and said wafer; and

a mechanism for forcing said plate towards said wafer so that said paste is forced into said vias of said wafer.

19. (withdrawn) The apparatus as recited in claim 18, wherein said mechanism for forcing said plate towards said wafer comprises:

gas removal apparatus for evacuating gas between said plate and said surface upon which said wafer is placed; and

gas replacement apparatus for replacing gas evacuated from said chamber.

20. (withdrawn) The apparatus as recited in claim 19, wherein said gas replacement apparatus comprises an opening through which gas is permitted to enter said chamber.

21. (original) The apparatus as recited in claim 12, wherein said surface upon which to place said wafer comprises a base plate having a recess for said wafer.

22. (original) The apparatus as recited in claim 21, wherein said surface upon which to place said wafer comprises a surface of an electrostatic chuck.

23. (original) The apparatus as recited in claim 12, wherein said paste delivery portion comprises a pressurized paste reservoir.

24. (withdrawn) The apparatus as recited in claim 12, wherein said paste filling portion comprises:

- a piston housing having an opening for receiving a piston;

- a compliant seal for sealing said piston housing to a portion of said wafer so as to confine said paste;

- a piston disposed in said piston housing; and

- a piston actuator for forcing said piston toward said wafer;

wherein said paste delivery portion provides said paste to said opening.

25. (withdrawn) The apparatus as recited in claim 24, further comprising:

- a mechanism for moving said piston housing so that said seal is compressed for filling said vias.

26. (withdrawn) The apparatus as recited in claim 25, wherein

said mechanism for moving said piston housing further moves said piston housing to a position wherein said seal is compressed to a lesser degree than when said vias are filled, to thereby allow said piston housing to be moved so that said piston housing is disposed so as to be in a position to fill vias of one or more successive portions of said wafer with paste delivered to said opening.

27. (withdrawn) The apparatus as recited in claim 24, further comprising a mechanism for cleaning said piston of excess paste after vias of a wafer have been filled.

28. (original) The apparatus as recited in claim 12, wherein said paste filling portion comprises:

an elongate member having a surface with a slot through which paste is provided to said wafer; and

a compliant seal for sealing said surface to said wafer.

29. (original) The apparatus as recited in claim 28, further comprising a mechanism for translating said member and said wafer with respect to one another so as to fill vias in successive portions of said wafer.

30. (original) The apparatus as recited in claim 28, further comprising a mechanism for rotating said member and said wafer with respect to one another so as to fill vias in successive portions of said wafer.

31. (original) The apparatus as recited in claim 30, wherein said mechanism for rotating said member and said wafer with respect to one another comprising a rotating base having said

surface upon which said wafer is placed.

32. (original) The apparatus as recited in claim 28, configured to accept a circular wafer, wherein said elongate member is disposed radially with respect to said wafer.

33. (currently amended) The apparatus as recited in claim 32, wherein said elongate member has a length less than that of a radius of said wafer, wherein said apparatus further comprises:

a mechanism for rotating said wafer; and

a mechanism for radially translating said member in a radial direction with respect to said wafer.

34. (original) The apparatus as recited in claim 33, wherein said mechanism for rotating said wafer includes a rotation speed control to control speed of rotation of said wafer.

35. (original) The apparatus as recited in claim 33, wherein said mechanism for radially translating said member includes a translation speed control to control speed of translation of said member with respect to said wafer.

36. (original) The apparatus as recited in claim 33, wherein said mechanism for radially translating said member includes a worm gear assembly, and a motor for rotating a drive shaft of said assembly.

37. (new) The apparatus as recited in claim 12, wherein said wafer is disposed entirely within said chamber.

38. (new) The apparatus as recited in claim 12, wherein said paste filling portion is disposed entirely within said chamber.

39. (new) The apparatus as recited in claim 12, wherein said wafer and said paste filling portion are disposed entirely within said chamber.